

METHOD AND SYSTEM FOR PROVIDING INTEGRATED
BROKERAGE AND OTHER FINANCIAL SERVICES
THROUGH CUSTOMER ACTIVATED TERMINALS

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CROSS-REFERENCE TO RELATED APPLICATION

Reference is made to commonly owned co-pending
application entitled "INTEGRATED FULL SERVICE CONSUMER
15 BANKING SYSTEM AND SYSTEM AND METHOD FOR OPENING AN
ACCOUNT," Serial No. 08/483,710, filed herewith
(Attorney Docket No. 107045.003), ^{Now Abandoned} the disclosure of which
is incorporated by reference herein.

FIELD OF THE INVENTION

20 This invention relates to a method and a system
for providing brokerage services through a network of
automated teller machines. In particular, it relates to
a method and system for buying and selling securities and
for obtaining security price quotations.

25 BACKGROUND OF THE INVENTION

In the past, financial services have been made
available in various ways depending on the type of
service being offered. For a variety of reasons, the
methods of providing brokerage services, such as the
30 buying and selling of securities, and of providing
traditional banking services, such as depositing and
withdrawing funds, have been extremely divergent. For

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5 through use of automatic teller machines (ATMs). On the
other hand, many brokerage services are often initiated
by direct customer-broker contact, for example, over the
telephone or by facsimile. Once an order is received,
the brokerage company performs the requested service,
10 such as buying or selling a particular security at the
appropriate exchange.

15 customer will generally verify the current selling price
of a security to be purchased and then contact a broker
to request that the purchase be made. One or both of
these steps introduces a time lag which may result in the
transaction failing to go through as intended by the
20 customer.

Recent technological developments have somewhat improved brokerage services. In particular, improved communications methods have made it easier for a customer to contact a broker to place an orders or to obtain information. Other new methods have also made it easier for the broker to implement orders and to obtain up-to-date information regarding security prices. For example, U.S. Patent Nos. 4,376,978, 4,597,046 and 4,774,663 describe a system for supervising a margin securities account wherein the system verifies various account activities, such as check cashing, and determines available credit so as to maintain free credit cash in one or more short term accounts. U.S. Patent No. 4,674,044 describes an automated securities trading system. U.S. Patent No. 5,270,922 describes a system for

While providing many benefits, such prior art systems are generally limited to use by brokers or more sophisticated, affluent consumers who generate a fairly large volume of transactions. Moreover, while keeping track of certain other financial transactions for the purpose of preventing floats, these systems generally lack integration with non-brokerage financial transactions. In particular, most lack any means of providing the functions traditionally made available through a bank teller, such as depositing and receiving funds.

Some attempts have been made both to increase the availability of the financial services to a greater portion of the consumer market and to integrate various financial transactions. For example, the development of networks of automatic teller machines (ATMs) have greatly expanded the hours of operation during which banking services are available, while reducing operating costs. Generally, these machines have been used to reproduce the most common functions traditionally provided by a bank teller, such as receiving deposits, dispensing funds from a customers accounts, and responding to balance inquiries.

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envelopes, and a cash dispensing mechanism 26. Internal components include a processor 30 and a communications device 32 for data communication with a host system 10.

The CAT 6 also utilizes more advanced structures in comparison to many conventional ATMs. For example, the primary customer interface is a dynamic touch screen 28 which utilizes color graphics. This interface is more versatile than many other ATMs in that it is readily reconfigurable so as to accommodate changing newly developed functionality. Moreover, it provides an interactive display in which buttons and keys are replaced with images of familiar three-dimensional objects.

It will be appreciated that the enhanced telephone 2 and the personal computer 4 shown in Fig. 1A differ dramatically from the CAT 6 in that the former include no means to perform mechanical functions through a fund depository or a dispensing mechanism. However, all the data terminals illustrated in Fig. 1A, including the CAT 6, the enhanced telephone 2 and the personal computer 4 provide a substantially uniform interface for performing many other financial transactions. These financial transactions include traditional banking functions, such as transferring funds between a checking account and a savings account. Additionally, several of the access points referred to in Fig. 1A can be used to perform "non-traditional" functions, such as bill payment, information retrieval, and access to customer accounts for mutual funds offered by the present assignee and/or its affiliates. In particular, data terminals such as the CAT 6, the enhanced telephone 2, and the personal computer 4, have been used by customers to transfer funds among money market accounts, checking accounts, and savings accounts. They have also been used to purchase, redeem and exchange shares of mutual funds offered by companies affiliated with the assignee of the

present invention. Delayed price quotations through a vendor of such services have also been made available. Thus, these access points form a part of a increasingly integrated financial system.

5 While providing many benefits, the services available through the systems described in reference to Figs. 1A and 1B were limited in several respects. Foremost, no provision was made to buy, sell, or receive price quotations for the vast array of securities
10 publicly available through various exchanges and other financial institutions. Instead, only a limited number of funds were available through an affiliated company. Moreover, being limited primarily to money market
15 accounts, a danger existed that a less-sophisticated customer would not adequately distinguish between a transfer of funds between a federally insured account, such as a standard checking account, and a non-insured account.

SUMMARY OF THE INVENTION

20 In view of the limitations which have characterized previous financial service networks, it is an object of the invention to provide a system and a method for offering brokerage services through an ATM network. In particular it is an object of the invention
25 to provide a system and method by which consumers can readily buy and sell securities, obtain brokerage account information, and obtain current security price information.

30 It is a further object of the invention to offer the above-mentioned services through a preexisting network that is familiar to customers, such as an ATM network.

35 It is yet another object of the invention to conveniently provide brokerage services in conjunction with other financial services, for example, bill payment,

and deposits, withdrawals and transfers, but in a manner which does not interfere with a customer's ability to distinguish between brokerage transactions and such other financial services.

5 In fulfillment of these various objects and others, disclosed is an integrated financial system comprising an automated teller machine for providing a customer interface to the financial system. The automated teller machine includes processor means, input
10 means for receiving customer information from a customer, display means for displaying information to the customer, and a dispenser mechanism, wherein the processor means receives the customer information and controls the display and the dispensing mechanism. The system also
15 includes first communication means for remote transmission of first data from the automated teller machine to a front end processor system. The front end system is coupled to the first communication means and interprets the data from the automated teller machine.
20 It provides data to the automated teller machine whereby the front end processor system controls a plurality of customer interactive processes implemented through the automated teller machine processor means. The system also includes second communication means for transmission
25 of third data from the front end processor system and a brokerage system. The brokerage system receives data from the front end processor system through the second communications means and provides fourth data thereto. The brokerage system maintains a record corresponding to
30 a brokerage account, which includes indicia of the number and type of securities held on behalf of the customer. Further, the brokerage system receives trade orders from the customer through the automated teller machine and the front end system and places orders to implement the
35 orders.

According to a feature of the invention, the integrated system further includes a quotation system for providing securities price information substantially in real time through the brokerage system, the front end processor and the automated teller machine.

According to another feature of the inventor, the system also includes means to compute a current value of securities held on behalf of a customer based on the securities price information, wherein the current value is displayed to the customer with the automated teller machine upon request of the customer.

According to still another feature of the invention, the securities include stocks, bonds, and mutual funds.

According to yet another feature of the invention, the display means and the input means comprise a touch screen display.

According to still another feature of the invention, the system includes means for cross referencing a security symbol with other information, including a security name, in response to a customer request.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

Figure 1A is a block diagram showing various access points for communicating with a front end processor.

Figure 1B is a block diagram showing elements of a customer activated terminal (CAT) which communicates with a front end system.

Figure 2 is a block diagram showing a top level view of a system according to the invention.

Figure 3 is a partial flow chart of a system according to a first embodiment of the invention.

Figure 5A to 5D are flow charts illustrating a process for purchasing stocks in accordance with a first embodiment of the invention.

Figure 7 is a flow chart showing a process for
10 displaying portfolio information in accordance with a
first embodiment of the invention.

15 Figure 9 is a flow chart illustrating a process
for obtaining securities symbols in accordance with a
first embodiment of the present invention.

Figure 11 is a flow chart illustrating a process for determining opening orders in accordance with a first embodiment of the present invention.

Figure 13 is a flow chart illustrating a
30 process for displaying recent activity in accordance with
a first embodiment of the present invention.

35 Figure 15 is a block diagram illustrating
brokerage system in communication with a front end

Figure 16 is a flowchart illustrating a second embodiment of the invention.

Figures 18A and 18B are flowcharts illustrating a process for selling mutual funds in accordance with a second embodiment of the invention.

Figures 20A to 20C are flowcharts illustrating
15 a process for exchanging mutual funds in accordance with
a second embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

Exemplary embodiments of the invention are set forth below with reference to the drawings. Merely to facilitate understanding of this description and not for purposes of limitation, the following definitions are provided:

ATM (automated teller machine): A terminal used for banking transactions which includes a customer input device (usually a keypad), a card reader, and a

BATS (brokerage automated trading system): An automated system used to receive ordered transactions, to record and edit such orders, and to formulate and transmit order messages to a brokerage account manager.

CAT (Customer Activated Terminal): A customer activated, touch screen terminal utilizing color graphics. This terminal receives input from a customer through a card reader, a depository slot, and touch areas of the touch screen display. It provides an interface to a front end or host computer.

CPS (cross product services): A regional interface which provides multi-region access to various applications.

FEP (front end processor): A system to which CATs are connected which provide service provider information and network control.

35 Integrator: A part of a software environment
which handles details of message processing to the host

or FEP, including initialization process, application requests, function retries, and ESP status.

PIN (personal identification number) or PIC (personal identification code): A number selected or provided to a customer which is required to access the system so as to provide system security.

TPS (transaction processing system): An on-line transaction processing system (front end processor) that supports both financial and non-financial transactions requested at various terminal interfaces, including CATs, in order to process and implement requested various transactions.

B. System Overview (Fig. 2)

Fig. 2 is a block representation of various individual systems and interfaces which together comprise an integrated banking and brokerage system according to the invention. As shown, a plurality of customer activated terminals, represented collectively by a CAT (ATM) 52 exchanges data with a front end processor 54, referred to as a TPS. As explained in detail below, the TPS 54 accesses customer account information required to process a customer requested transaction by first referring to a cross reference file (not shown) containing data elements linking the customer's CIN, the BIN the FIMP and other information on the customer's card.

The TPS 54 communicates with a regional interface 56 (referred to as CPS) which provides access to various applications. In the example shown in Fig. 2, CAT orders are sent via the TPS 54 to the CPS 56 region. The CPS 56 provides a gateway to the brokerage system 58 consisting of two linked systems, a Tandem system 60 and a RS6000 system 62. The brokerage system 58 provides information, such as buy and sell orders, which are sent to appropriate persons at various securities exchanges

68. The brokerage system 58 also obtains quotation and portfolio information which is then provided to the customer through the TPS 54. Real time quotes are obtained through a quote server 64 which is connected to a track ticker 66.

As described in greater detail below, the CPS 56 creates and edits both order logs and transaction files based on request from the CAT 52. These order logs and transaction files are used by the brokerage system 58 to provide price quotations and to place buy and sell orders. The CPS 56 also provides a symbol directory (not shown) to interpret securities symbols utilized by the customer. As will be appreciated by those skilled in the art, the systems and interfaces shown in Fig. 2 include any range of suitable hardware, including processors and associated memory, to implement the methods described herein.

C. Overview of System Operation

1. First Embodiment (Figs. 3-13)

Within the framework of this system, it is possible for a customer to use a CAT network to perform various brokerage services, including the buying and selling of securities, the pricing of securities, and the computing of portfolio value. Figs. 3 to 13 are flow charts which illustrate a first method by which such services, and others, are made available to a customer through a CAT.

As shown in Fig. 3, a customer accesses a main menu displayed on the CAT in a manner known in the art by inserting a customer card and inputting a PIN. This information is providing to the front end. The front end consults stored information to verify the customer's account information in a manner known in the art.

In accordance with the invention, the customer is then presented with an option display including an

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On the other hand, if it is determined that the brokerage system is available, the front end system queries the brokerage system to determine if trading is currently restricted in any respect. For example, the front end system determines whether there are no restrictions on trading, whether only selling is available, or whether no trading whatsoever is permitted based on a data element from the brokerage system. In the latter case, an appropriate message such as "no trades are now allowed" is displayed and the customer is returned to a previous options menu. On the other hand, if buying and/or selling is permitted, either the buying

stocks process shown at Figs. 5A to 5D, or the selling stocks option shown at Figs. 6A to 6C are implemented.

If the customer wishes to obtain information by selecting a "get information" option from the securities menu, the customer is provided with options illustrated in Fig. 4. These options include a "holdings" option, a "stock quotes" option, and a "symbol directory" option, and an "activity and orders" option. In the event that the "activity and orders" option is selected, the process continues as shown in Fig. 10, described below.

If any of the first three options are selected, the system determines whether the customer has a brokerage account, as described above. If not, the "product not available" screen is displayed and the customer is returned to a previous options menu. If the customer has at least one brokerage account, it is then determined how many different accounts are available. If more than one is available, the system prompts the customer to select the account for which information is being requested in the manner described above. Once an account is selected in this manner, account profile information is displayed to the customer as described above in Fig. 3.

The front end system then determines whether the brokerage system is available for providing the requested information. If not, an appropriate message is displayed as described above and the customer is returned to a previous options menu. If the brokerage system is available, the process continues as shown in Fig. 7, Fig. 8 or Fig. 9, depending on which respective option, "holdings", "stock quotes", or "symbol directory", had been selected by the customer.

As shown in Fig. 7, if the "holdings" options had been selected, a portfolio inquiry is made by the system and an response showing each holding and total asset value is displayed based on data segments provided

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	Next line (max to N+4)	{account}	"short", "margin", "pledged" (displayed only if appropriate);
5	Next line (max to N+5)	zz,zzz,zz9.zzz at zzzz9.zzz	1st variable, number of shares; 2nd variable, share price (if security unpriced, display "Unpriced" instead of "at z.zz9.zzz"); 3rd variable, NAV (displayed for Mutual Funds only)
10	Next line (max to N+6)	"Value:" \$zzz,zzz,zz9.99	variable, security value (if security unpriced, display "Unpriced" instead of "Value:" zzz,zzz,zz9.99);
15	Next line (max to N+7)	{Annuities Disclosure}	If a fixed annuity <u>only</u> , display "Your fixed annuities are reported here with your other non-FDIC insured investments for your convenience, even though they are not securities"

After all securities have been displayed, totals are provided, in the following order:

- 1) If customer has at least one fully owned/cash account security, "Market value of Securities, \$zzz,zzz,zz9.99" is displayed. If at least one security is unpriced, a disclaimer, "Not including unpriced securities", is also displayed;
- 2) If the customer has a cash balance, "Cash balance \$zzz,zzz,zz9.99" is displayed;
- 3) If the customer has a credit interest balance, "Credit interest balance \$zzz,zzz,zz9.99" is displayed;

5) If customer has at least one shorted security, "Short account balance, \$zzz,zzz,zz9.99" is displayed.

After all securities have been displayed,
"Total portfolio value, \$zzz,zzz,zz9.99" is displayed.

If the "quotes" option was selected from the "get information" menu, the process continues as shown in Fig. 8. First, it is determined whether trading is available as described above in Fig. 3. If not, the user may return to a previous options menu. If trading is available, it is determined whether the customer has reached a predetermined daily maximum number of quotes.

If securities are available for sale, a "tell stocks symbol" screen is displayed. This screen prompts entry of up to five stock symbols, by displaying the header "please tell me the stock symbols." Each symbol

correspondence to a particular security. As an added feature, the system also informs the customer that up to five quotes can be requested at a time. If the customer has fewer than five quotes (one to four) remaining, the header indicates "I can give you N more today" where N is the appropriate number of quotes remaining in the customer's allowance from 1 to 4. In this way, the customer is informed how many additional quotes are available.

10 The customer then enters the stock symbol of each security for which the customer desires to obtain a quotation. Preferably, this entry is input through a "keyboard" displayed on the touch screen input of the CAT. As shown in Fig. 8, the customer is also provided with the options of using the symbol directory to look up the appropriate symbol for a given security or of returning to our earlier options menu. If the customer wishes to consult the symbols directory, the process continues as shown in Fig. 9. Once the appropriate symbol for each security has been entered, the information corresponding to the selected securities are sent to the brokerage system, and price quotations are obtained. In obtaining quotations, the system determines whether a connection to the quotation service is currently available. If not, the system indicates to the customer that the service is unavailable, and the customer is returned to an earlier screen. If the service is available, a price quotation is provided to the customer. For example, information such as the daily high, the daily low, the last available price, the change from the previous day and the total volume of trading for each security may be provided. An example of the "here are quotes" screen referred to in Fig. 8 follows:

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to the front end to look up a stored list of security names beginning with the entered letter(s). The system provides a symbol look-up list screen. If at least one exact match exists with the name entered, the first match is displayed followed by the next three listings. If no exact matches exist, the next closest name is displayed, followed by the next three listings.

The "symbol look-up list" screen displays up to four stocks (common and preferred) per screen, and includes full backward and forward scrolling capability for all stocks beginning with the name or name fragment entered by the customer. The display is in alphabetical order by security name, not by symbol. Once the symbol list has been displayed, the customer is given the option of inputting another request.

If another request is desired, the "symbol look-up arguments" screen is again displayed. On the other hand, if no additional request is required, the system determines the point from which the symbol look-up process was accessed. If accessed from the quotes menu, the process returns to the "tell stock symbols" menu shown in Fig. 8. If the system entered the symbol look-up menu from the stocks menu, the system returns to Fig. 5A. If the system entered the symbol look-up menu from Fig. 4, it is presumed that the customer has obtained the information requested and the process resumes at an appropriate conventional options menu.

Accordingly, Figs. 4, 7, 8, and 9 demonstrate how holdings, quotes, and symbol look-up functions are available through the system. Fig. 10 (carried over from the activity in orders menu shown in Fig. 4), illustrates how activity in orders information can be displayed to the customer. This menu provides the customer with the option of determining any open orders, any trades awaiting settlement, or any recent activity. As shown in Fig. 10, the selection of one of these three options

prompts the system to determine whether the customer has a brokerage account or multiple brokerage accounts as explained above in reference to Fig. 3. It also determines whether the brokerage provider is available as explained above. Once this information has been verified, the system proceeds with the open orders menu described in Fig. 11, the trades awaiting settlement menu described in Fig. 12, or the recent activity menu described in Fig. 13.

The "open orders" menu shown in Fig. 11 is displayed following selection of "open orders" from the orders and activity screen when at least one open order exists, including those initiated by other customer interface terminals apart from the ATM.

This menu permits the customer to receive information stored in a file maintained by CPS. This information keeps track of all orders placed and their status.

As shown, the open orders request is sent to the system which determines whether any open orders exist. If none exist, then the system returns to an earlier options menu. If open orders do exist, information relating to the orders is provided. For example, the system displays the type of order (buy, sell, buy to open, buy to close, sell to open, sell to close, margin buy, and margin sell), the size of the order, the name of the security, the type of security (for example, mutual fund or stock) whether the price of the security is at a predetermined limit, the duration of the order, the date the order was placed, whether the order has been partially executed, and any other qualifying information which may be appropriate. More particularly, as few as one open order and up to two orders may be displayed per screen. Expired, cancelled or killed orders may also be displayed. An exemplary screen indicating the open orders display follows:

Line	Text or {SDE}	Comments
1-2	"Here are your Open Orders (any order may have been executed)"	
N	{type of order} {size of order}	1st variable, "buy", "sell", "buy to open", "buy to close", "sell to open", "sell to close", "short", "exchange", "margin buy", "margin sell"; 2nd variable, "Qty: zz,zzz,zz9.zzz" (if not \$ trans) or \$zzz,zzz,zz9.99 (if \$ trans)
5 N+1 (max through N+4)	{Security Name} XXXXXX	1st variable, as transmitted: for most securities, X(30); for pref stock, 2●X(30); for mutual funds, 2●X(30); - for an exchange of mutual funds, each fund name displayed 2●X(30), along with: "From: [fund name]" and "To: [fund name]"; for muni bonds, 4●X(30); for T Notes/T Bonds, X(30)+z9.999% Due MM/DD/YY; for T Bills, X(30)+Dated MM/DD/YY Due MM/DD/YY 2nd variable: "shares" if stock or mutual fund; otherwise suppressed

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next line (max to N+5)	{limit/stop info} {order duration}	1st variable, "at" + limit price and/or stop price (for stop-limits, both limit and stop price are displayed: "at zz9.zzz stop zz9.zzz") 2nd variable, "Day order" or "Good 'Till Cancelled" (both variables/entire line suppressed unless limit, stop of stop-limit);
next line (max to N+6)	Order placed xxx z9" {partial}	1st variable, date placed 2nd variable, "Order partially executed" (2nd variable suppressed unless partial) (both variables/entire line suppressed for mutual funds)
next line (max to N+9)	{Qualifier(s)}	As transmitted (if any; maximum of 3); -Do not Reduce; -All or None; -Fill or Kill; -Immediate or Cancel; -With or Without; -Or Better; -Extended Session; -Not Held

next line (max to N+10)	{Status}	As transmitted (if any):
		<ul style="list-style-type: none"> -Pending -order sent to the exchange -Cancellation request sent to the exchange -Cancelled -Cancelled by exchange or clearing broker -There's a problem. Please contact xxxxxx [SDE, consult] -Option expired -Order expired unfilled -Order will be placed when the market opens -Order partially executed

Once the open order screen has been displayed,
the customer can opt to return to an appropriate options
5 menu.

Fig. 12 describes a trades awaiting settlement
display process. This process permit the user to receive
information stored by the system to keep track of trades
that have not yet been undergone settlement. As shown, a
10 "here are trades awaiting settlement" screen is displayed
following selection of "trades awaiting settlement" from
the "orders and activity" screen when at least one
executed order awaits settlement. This screen displays
all trades awaiting settlement, including those initiated
15 by means other than an ATM. As shown in Fig. 12, if no
orders or activity exists, the customer is returned to an
earlier menu. If trades awaiting settlement are
available, the following information is displayed:

<u>Line</u>	<u>Text or {SDE}</u>	<u>Comments</u>
1	"Here are your Trades Awaiting Settlement:"	
N	xxx z9 {type of order}	1st variable, trade date; 2nd variable, "Bought", "Sold", "Bought to Open", "Bought to Close", "Sold to Open", "Sold to Close", "Shorted", "Exchanged", "Bought on margin", "Sold on margin"; + (if partial only), "Partial"

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next line (max through N+8)		For Bond purchase or sale only, "Accrued interest may have been xxxxxxxx" (charged; received) -otherwise, suppressed
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Fig. 13 shows the recent activity menu which is available following selection of "recent activity" from the orders and activities menu in Fig. 10. As shown, a recent activity message is sent to the front end system which determines whether any recent activity exists over a predetermined period. If not, an appropriate message is displayed to the customer, and the customer has the option of returning an earlier menu. If recent activity does exist, the recent brokerage activity is displayed to the customer, for example, as follows:

<u>Line</u>	<u>Text or {SDE}</u>	<u>Comments</u>
1	"Here is your recent Brokerage activity:"	

N	{date MMM DD} xxxxxxxxxxxxxxxxxxxx	1st variable, Settlement date, if a trade; otherwise, Posting Date 2nd variable, "Bought", "Sold", "Exchanged", "Bought on margin", "Sold on margin", "Interest", "Dividends", "Delivered", "Received", "Dividend Reinvested", "Journal Item" (Additional items may be transmitted to CAT and interpreted for display)
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<p>N+1 (max through N+4)</p>	<p>xxxxxxxxxxxxx MMM DD {Security Name} xxxxxxx</p>	<p>1st variable, "Trade date" MMM DD", displayed only if a trade;</p> <p>2nd variable, as transmitted: for most securities, X(30); for preferred stock, 2●X(30); for mutual funds, 2●X(30); - for an exchange of mutual funds, each fund name displayed 2●X(30), along with: "From: [fund name]" and "To: [fund name]"; for muni bonds, 4●X(30); for T Notes/T Bonds, X(30)+z9.999% Due MM/DD/YY; for T Bills, X(30)+Dated NN/DD/YY Due MM/DD/YY</p> <p>3rd variable: "shares" if stock or mutual fund; otherwise suppressed</p>
<p>Next two lines (max to N+6)</p>	<p>zz,zzz,zz9.zzz xxxxxx at: \$z,zz9.zzz xxx xxxxxx</p>	<p>1st variable, quantity; 2nd variable, "shares" (suppressed unless interest or dividend); 3rd variable, unit price (if security unpriced, display "Unpriced" instead of "at z,zz9.zzz"; suppress if delivered/received transaction); 4th variable, "per share" (suppressed unless interest or dividend).</p>

Next line (max to N+7)	Total: \$zz,zzz,zz9.99 -or- {Accrued Interest}	Total transaction price (price x qty, plus or minus commission, as applicable) suppressed for Bond Trade For Bond purchase or sale only, "Accrued interest may have been xxxxxxxx" (charged; received)
Next line (max to N+8)	{Partial}	"Order Partially Executed" (display only if partial order)
Next line (max to N+9)	Commission: \$zz,zz9.99	Commission Entire line suppressed if zero and for interest and dividends, for dividends reinvested, for delivered/received transactions, and for journal items Note: SEC fees are not displayed

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In this manner, the customer is given the option of obtaining various information pertaining to various securities transactions and/or securities prices, such as sales dates, amounts, and commissions.

As mentioned above in reference to Fig. 3, the customer may have requested to buy or sell stocks instead of requesting information. These processes are described respectively in reference to Figs. 5A through 5D and 6A through 6C.

As shown in Fig. 5A, the selection of "buy stocks" from the securities menu of Fig. 3 displays a "which symbol to buy" screen. This screen prompts entry

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of a stock symbol of one to seven characters using a "keyboard" displayed on the CAT's touch screen. If no symbols are entered, the customer is given the option of selecting a symbol from the directory.

5 If the "select symbol" option is selected, the
system implements the process described above in
reference to Fig. 9. On the other hand, if a symbol is
entered, the system looks up the symbol entered to
determine which security is being requested for purchase,
10 and then sends a request for current price quotation for
that security. In doing so, the system first determines
whether the quotation system is on-line. If not, a
suitable message is displayed to the customer and the
customer is returned to an earlier options menu. If the
15 quotation system is operational, it is determined whether
the symbol entered by the customer is recognized by the
system. If not, the customer is given the option of
using the symbol directory in accordance with the process
described in Fig. 9. Once the appropriate symbol has
20 been entered and the real-time quotation system is
operational, a real-time quote is provided from the
quotation system.

If the symbol entered by the customer corresponds to a stock whose latest available price is less than a predetermined amount, such as \$1.00, the system displays a screen stating "I'm sorry...I can't accept trades of stocks priced under \$1.00 per share here." The system preferably then displays a referral to a customer service representative for further assistance to the customer and returns the customer to an earlier option menu.

It is then determined whether the symbol entered by the customer corresponds to a stock or other type of security that cannot be traded with the system. If so, the system displays a message such as "I'm sorry...I can't handle purchases or sales of this class

of stock here." Again, the system preferably displays an appropriate referral for the customer further assistance.

The system further determines whether trading has been suspended of the appropriate exchange. If trading has been suspended or if it has been restricted to certain activities, an appropriate message is displayed and the customer is returned to an earlier options menu. Similarly, the system determines if the requested security can be traded with the CAT.

If the price is over the predetermined limit, trading is not suspended, and the requested security is available for trading with the system, an appropriate message is sent to the customer. The system requests how many shares the customer wishes to buy as shown Fig. 5B.

At this point, the system checks to see if an entered number of shares to be bought is above a predetermined maximum shares. If so, the system displays the maximum number of shares permitted for trading and returns the customer to an earlier options menu to further proceed.

If the entered number is less than the predetermined maximum number permitted by the system, a "market/limit" screen is displayed which states "how do you want to buy the shares" and displays one of two options -- market or limit. The selection of a limit button displayed on the

touch screen results in a "limit price screen" described below. Selection of a displayed market button initiates various checks for order acceptability based on the following: total price (based on latest available price) in comparison with a predetermined amount; and (2) a

check against the customer's brokerage account in order to determine whether the customer has funds available to satisfy the purchase. Alternatively, the system may determine whether the available funds within a predetermined range of the current price check is not

applicable to the customer. If the order passes these checks, the system proceeds as shown in Fig. 5C

The limit price screen of Fig. 5B is displayed following either selection of "limit" on the market/limits screen or selection "yes" on the too little for limit screen described below. The limit price screen displays numeric keypad which includes numeric keys and buttons corresponding to fractional share amounts, such as 1/8, 1/4, 3/8, 1/2, etc. The customer is prompted to state a limit price. Once this limit price is input by the customer, the system determines whether the requested limit price is over a predetermined minimum amount, such as \$1.00. The system then determines whether the limit amount is within an amount based upon a percentage difference from the current price. For example, it is determined whether the requested limit is within 20% of the current price. If not, the system displays an appropriate message stating that the limit is too low, and asks the customer if he or she wishes to try again later. If so, the customer is returned to the limit price menu. If not, the customer is returned to an earlier options screen.

If the limit amount is determined to be within the established parameters, the system checks whether the customer's account and the request meet the criteria described above with regard to a selection of the market key. Specifically, the system determines whether the customer's account contains funds sufficient to cover, for example, at least 10% of the requested purchase, and also determines whether both the number of shares and the total dollar amount of the purchase are above a predetermined maximum limit. If so, an appropriate message is provided to the customer and the customer is returned to an earlier options menu. Otherwise, the system continues as shown in Fig. 5C

As shown in Fig. 5C, if a limit option was selected by the customer, a "today or GTC" screen is displayed. This screen queries the customer as to the

length of time the customer desires the order to be in effect. The customer is given the options of "today only" or "good 'til order cancelled" (GTC). The latter option permits the customer to specify a future date at which the order will be cancelled if it has not previously been performed. Upon selection of either option, or if the customer has previously selected the "market" option, the system preferably determines whether the customer is provided discount service or full service. If the customer has a full service account, the system asks the customer whether an investment consultant recommended the purchase. The customer's answer is logged for internal use and a "stock recap" screen is displayed.

The stock recap screen is displayed after selection of either the "limit" or "market" options. This screen displays the following text:

<u>Line</u>	<u>Text or {SDE}</u>	<u>Comments</u>
1	"Okay, here's the order I have for you"	
4	xxxx: zz,zzz,zz9 shares	variables, "Buy" or "Sell", and the number of shares
5	"of:" 2●X(30)	variable, the stock name
7	"Symbol:" xxxxxx	variable, the symbol symbol
8	"As follows:" xxxxxxxxx	variables, "At Market" or "Limit" and limit price if "Limit"
next line	xxxxxxxxxxxxxxxxxxx	variable, "Day Order" or "Good till cancelled" (suppressed unless Limit Order)

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Selection of "no" in response to this message displays a change or cancelled screen.

The first error check implemented by the host system determines whether the customer's order is a possible duplicate. To perform this operation, the system checks the open orders and trades awaiting settlement information as described above. The possible duplicate screen recaps the previous open orders/trade and displays all information provided on either the "here

are open orders" or "here are trades awaiting settlement" screens described above. If more than one possible duplicate order exists, the possible duplicate screen gives the customer the option of continuing through each duplicate which has been found. Once all possible duplicate orders have been reviewed by the customer, the system asks whether it should go ahead with the new order. If the customer responds affirmatively, the process continues. If the customer selects "no" the system displays the "won't place" order screen and returns the customer to an earlier options menu.

The next error check performed by the system verifies the customer's personal identification code (PIC). Specifically, the customer is prompted to re-enter his or her PIC in order to proceed with the transaction. The system consults which cross references the customer's PIC with the information previously provided by the customer to ensure that this information matches. Once a valid PIC has been accurately entered, the system continues as shown in Fig. 5D

As shown in Fig. 5D, a "send trade" message is sent once the aforementioned error checks have been performed by the system. This prompts the system to determine whether the customer has first selected a security which has previously been deemed to be restrictive. If so, the trade is rejected and the customer is returned to an earlier options menu. If not, the system determines whether the host brokerage system is available. If it is unavailable, an appropriate message is displayed and the customer is returned to an earlier options menu. If the system is available, the process continues by determining whether there is any uncertainty as to the probability that the order will successfully go through. If so the customer is provided with an appropriate message and then returned to an earlier option menu. If no uncertainty is determined at

In this manner, the customer may conveniently place purchase orders for immediate purchase or at a predetermined price. These options are conveniently provided to the customer through an existing platform in conjunction with several safeguards designed to ensure both that the trade will go through as requested and that the customer has sufficient funds to cover the transaction.

If the customer does have a saleable stock, the "which stock to sell" menu prompts the customer to select one of the saleable stocks. The system also displays the most recent price of the stocks which are saleable. Specifically, the system sends a request for a real time quote and determines whether the quotation service is available. If not, a message is displayed indicating that the system cannot perform a "sell" transaction and the customer is returned to an earlier options menu. The system performs various error checks such as those described above in reference to the "buy stock" option. Specifically, the system sends a possible duplicate summary and then displays a "how many shares" menu.

As shown in Fig. 6B, the process continues by determining whether the price of the stock which the customer wishes to sell is less than a predetermined amount, such as \$1.00. If so, the system displays a "can't trade under \$1.00" message and returns the customer to an earlier options menu. The system further determines whether the number of shares entered is greater than a predetermined maximum number of shares. If so, a maximum share number is displayed to the customer and the customer is returned to an earlier options menu. If the requested amount is below the maximum limit, it is determined whether the number of shares that the customer wishes to sell is above a minimum number. If an insufficient number is requested, the customer is returned to an earlier options menu. If the number of shares is above the minimum and meets the previously described criteria, the system displays a "market limit" screen. This screen asks the customer "how do you want to sell the shares" and prompts the customer to select either a "market" button or a "limit" button. Selection of the "limit" button results in display of the limit price screen. Selection of the "market" button initiates edit checks for order acceptability based on criteria described below.

The limit price screen provides the customer with the option of inputting a desired price at which the customer wishes to sell the selected security. Specifically, the CAT displays a numeric keypad which includes fractional dollar amounts such as 1/8, 1/4, 3/8, 1/2 and so forth. The system prompts the customer to enter a limit price using this display. Once the customer has entered a limit price the system determines whether the price is within a predetermined fraction of the current security value. For example, if the limit is 20% greater than the current price the system displays a "too much for a limit" screen. This notifies the

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Once the stock recap screen has been displayed, the process continues as shown in Fig. 6C.

As shown in Fig. 6C, once the stock recap has been displayed the customer is asked whether or not to place the order. If the customer indicates not to place the order, the customer is asked whether to change or cancel the order. If the order is cancelled, this request is confirmed and the customer is returned to an earlier options menu. If the customer wishes to change the order the system returns to the "how many shares menu. If the customer confirms that it is desired to place the order then the system checks for possible duplicates in a manner similar to that described above in reference to the "buy shares" option.

For example, the system checks if there are any possible duplicates based on the duplicate summary provided by the system as shown in Fig. 6A. If any possible duplicates are shown, they are displayed to the customer with the ATM screen. The system determines whether the requested order and the previously requested orders which have not gone through together are greater than the number of shares held by the customer. If so a "possible duplicate makes non-sufficient shares" screen is displayed. This screen reads, for example, "I am sorry...I can't accept this order. You have other orders outstanding for some or all of these shares." The customer is then returned to an earlier options menu.

If the customer has sufficient shares to cover the newly-requested transactions, a "possible duplicates" screen is displayed. This screen recaps previous "open order/trade awaiting settlement" request, displaying all information provided on the "here are open orders" screen or "here are the trades awaiting settlement" screen which are displayed in response to the "get information" option.

Once this information has been relayed to the customer, the customer is asked whether to go ahead and place a new order. If the customer indicates not to place a new order, a confirmation message is sent to the customer, and the customer is returned to an earlier options menu. If the customer confirms that a new order is desired, the customer is asked to re-enter his or her PIC. Once the customer's PIC is correctly re-entered, a "send trade" message is sent to the brokerage system.

At this point the system determines whether the security which the customer has requested to be sold is restricted, whether the host system is available, and whether any uncertainty exists as to the likelihood that the transaction will proceed. For example, as shown, if the stock is determined to be restricted a "trade rejected due to encumbrance" message is displayed. If the host system is unavailable, a "trading system unavailable" message is displayed. If any uncertainty exists, a "may be a problem" is displayed. If any of these errors occur, the customer is returned to an earlier options menu.

If no problems occur, the customer's "sell" order is confirmed. The customer is then returned to an earlier options menu for further actions.

In accordance with this method, a customer may obtain current securities price information and current portfolio value, buy securities and/or sell securities without directly contacting a broker. The customer may further obtain standard banking functions such as balance inquiries, transfers, deposits and withdrawals, all at the same location. The system according to the invention thus provides most standard brokerage functions within an environment already familiar to the customer.

2. Second Embodiment (Figs. 16-21)

A second embodiment of the invention is now described with reference to Figs. 16 to 21. As set forth

5 following information: the status of a particular fund,
for example, whether it is open to all purchasers or only
to current holders; the availability of more than one
fund in a fund family; the existence of any exchangeable
sub-group of funds in a fund family; any breakpoint of a
10 fund and the amount; any minimum amount for first time
purchases, IRA purchases, or any higher minimum amount
set by the broker system; load information, such whether
any front end or back end loads exist; any maximum
transaction fees for purchase, redemption or exchange of
15 no load funds; any redemption fees for front end load
funds; any redemption restrictions; any promotions
available on purchases and, if applicable, the promotion
start and end dates; the availability of any hourly
trading; any per day fund purchase maximum, and if
20 applicable, the amount; and the minimum amount of in a
customer's account in order to make a purchase. This
information is maintained in records stored in a front
end system and/or a brokerage system. Data elements
representing this information is transmitted between
25 these systems and to a customer using a CAT. These
features and others are made apparent from the following
description.

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As shown in Fig. 17, the user is given the option of selecting one of three options: a "buy" option, a "sell" option, and an "exchange" option. The exchange process continues as described below in reference to Fig. 20A. If either the "buy" or "sell" options are selected, the system determines which type of security the customer wishes to buy or sell. Specifically, the customer is given the option to buy or sell stocks, mutual funds, or funds offered through a company affiliated with the bank (that is, a family of funds from an affiliated company). The latter option involves a process similar to the one referred to in the background of the invention. Selection of the first option, that is, the selection of trading stocks, results in a process similar to that described in reference to Figs. 5A-5D and 6A-6C of the first embodiment of the invention. The process for selling mutual funds is described in reference to Figs. 18A and 18B, and the process for buying mutual funds is described in reference to Figs. 19A and 19B.

35 Based on this selection, the system determines
whether the NAV of the fund is greater than zero. If the

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15 As indicated in Fig. 18B, the process then
determines if the requested amount is within
preestablished system parameters; for example, a
predetermined maximum and a predetermined minimum dollar
amount. If the requested transaction is greater than a
20 maximum amount, an appropriate message is displayed which
informs the customer of the maximum amount and a
consultant to contact directly to perform the
transaction. If the requested amount is below the
minimum amount, the system displays an appropriate
25 message depending on whether the customer requested the
sale by dollar or by amount. For example, the system
will display the minimum amount necessary for a sale by
dollar value or by share amount and the customer is
returned to an earlier option.

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indicate whether the requested transaction was solicited by a consultant and an internal record is updated based on the response. The system then determines whether any similar orders have been requested. If so, the system

5 verifies that a sufficient number of shares are available in the customer's account to complete the latest requested transaction. If there are insufficient unencumbered funds to complete the transaction, the user is informed of this fact and returned to a previous

10 options menu. If there are enough funds to proceed with the transaction, the system then informs the customer of the possible duplicate transactions. The customer is then given the opportunity to review each of the possible duplicate transactions. Once all possible duplicates

15 have been reviewed, the process may continue. As the customer reviews the duplicates, the customer is given the option of cancelling the order. If cancellation is requested, a confirmation message is displayed and the customer is returned to an earlier options menu.

20 If no similar orders were found, the order is recapped for the benefit of the customer. This recap preferably includes the number of shares of the particular security, the account to which the proceeds of the sales should be deposited, the amount of any

25 applicable fee, including any applicable back-end load, and the customary period for which the order will take place. At this point, the customer is given the option of cancelling the order or proceeding. If the order is cancelled, an appropriate message is displayed to the

30 customer, and the customer may then return to a previous options menu. If the customer desires to proceed with the transaction, the system determines whether any restrictions are in place by either the brokerage system or the exchange through which the fund is traded. Any

35 restrictions barring the requested transaction are indicated to the customer.

If no restrictions are present and the customer desires to proceed, the order is placed and an appropriate message is displayed to the customer. The customer may then return to another options menu.

5 The process for buying mutual funds is described in the flowcharts spanning Figs. 19A-19C. As shown in Fig. 19A, the system first determines whether the customer already owns any mutual funds. If a new fund is selected, the system either displays a message
10 requesting the customer to contact a consultant about purchasing new funds or prompts the user to input a mutual fund symbol. The system then determines whether the inputted symbol matches a name stored in the system's directory. If not, the user is informed that no match
15 was found and is given the option of trying again. If more than one fund is found, the user is given the option of selecting one matching fund.

 Once a new fund has been selected in this manner, the system determines whether the fund is open
20 for purchase. This involves determining whether the fund is available only to current holders, whether it is not open to new purchase, whether it is restricted due to "blue sky" restrictions, whether the selected fund is an off-shore fund requiring consultation, or if any other
25 system restrictions exist. Once each applicable restriction has been displayed to the user, the customer is returned to an earlier options menu.

 If the fund is open for sale, the system determines whether the user already owns any shares of
30 the selected fund. If no shares are already owned, the customer is asked whether the customer has received a prospectus. If not, the customer is informed that no purchase is permitted until a prospectus has been reviewed by the customer and the customer is returned to
35 an earlier options menu.

If the customer already owns shares of the selected fund, the system confirms this fact and the process continues as shown in Fig. 19A.

5 If the customer already owns shares of the selected mutual fund, the system then displays the symbol and name of each fund owned by the customer. If the fund is open for sale, it is next determined whether any promotional conditions exist. This is accomplished by consulting system variables associated with each fund.
10 If a promotion is available, a message is displayed stating that the fund may have a special offer for qualifying customers, and indicates a consultant for the customer to contact if interested. If the customer chooses to continue or if no promotions are in effect,
15 the process then continues as shown in Fig. 19B.

As shown in Fig. 19B, the system determines whether the mutual fund is hourly priced and whether a front-end load apply to the purchase of the fund. Once this information has been obtained, the system displays
20 the security's last available price, and indicates whether it was available on the hour. Any applicable front-end load is also displayed. The customer is then given the opportunity to proceed with the purchase or to return to an earlier options menu.

25 If the customer chooses to continue with the purchase the system requests that the customer input the amount of purchase. The system then verifies that the requested amount is within predetermined parameters, such as a maximum and a minimum dollar amount. If the
30 requested amount is below a minimum dollar amount, the minimum amount is displayed to the customer and the customer is given the option of inputting a greater amount. If the customer selects an amount which is greater than the maximum amount, the maximum amount is
35 displayed to the customer and the customer is returned to an earlier options menu.

5 If the amount selected by the customer is within the system parameters, the system continues depending on whether a front-end load is applicable. If a front-end load applies to the purchase, the sales charges for the purchase is displayed. If applicable for the selected fund, the system may also display a breakpoint. As known in the art, the breakpoint provides for a reduced fee if the purchaser or members of the purchaser's family have more than a fixed amount in the family of funds. The customer is given the option of indicating whether he or she feels that a reduced fee is available. If so, the customer is provided with a referral to contact in order to fill out a letter of intent (LOI). If the customer has already filled out such a letter of intent, or if no reduced fee is available, the customer is given the option of continuing.

20 The purchase process continues by determining whether the requested purchase is an initial purchase for the selected fund. If so, the customer is prompted to indicate whether to reinvest or transfer dividends to another account. A similar selection is made for future capital gains. If it is not the initial purchase, the previous selections are maintained. The system then determines whether the customer has a full-service account in order to obtain the information mentioned above. If the customer does not have a full-service account, or the customer has indicated whether or not a consultant had been contacted, the process continues as shown in Fig. 19C.

35 As shown in Fig. 19C, the process determines whether any similar orders exist. If so, the system determines whether the requested purchase amount is over a daily fund maximum. If so, the daily fund maximum amount is displayed and the customer is given the option of performing another transaction or of quitting. If the

requested amount is below the daily maximum, the customer is informed that a possible duplicate might exist. By displaying the purchase amount, the security, the source and destination, and the time at which the transaction will take place. The customer is prompted to review each possible duplicate and to indicate whether or not to continue. Once this process has taken place, the customer may proceed. The system then displays a recap of the requested purchase, including the amount, security name, and any applicable purchase fee. The customer is then requested to confirm that it is desired to complete the transaction.

If the customer desires to proceed with the requested buy order, the system verifies whether any restrictions are applicable. For example, the system determines whether a confirmation has been received, whether the system has imposed any restrictions, whether the channels through which the purchase is made are unavailable, or whether it is necessary to contact a consultant. If each of these criteria are met, the system indicates that the order has been placed and the customer may then return to an earlier options menu.

The process for exchanging mutual funds is illustrated in the flowcharts of Figs. 20A-20C. As shown in Fig. 20A, it is first determined whether the customer has any saleable funds. If not, an appropriate message is displayed to the customer who may then return to a previous options menu. If the customer has at least one saleable fund, the customer's saleable funds are displayed, and the customer is prompted to select a fund from which an exchange is to be made. Once a "from" fund has been selected, the system determines whether any other funds in the fund family are available for exchange. If not, a message is displayed indicating that the selected fund is the only fund in the family. If

other funds are available, a list is displayed for the customer to select from.

Once the customer indicates a particular fund as a "to" fund, the system determines whether the NAV of the "from" fund is greater than zero. If not, an appropriate message is displayed and the customer is asked to contact a consultant. If the NAV is greater than zero, then the system determines whether the "from" fund has an open order to be fully liquidated. If so, the system displays the outstanding order to liquidate and the customer is returned to an earlier options menu.

If meeting the previously described criteria, the system then determines whether the "to" fund is already owned by the customer. If not, the system determines whether the customer is eligible to proceed. If not eligible to proceed, a message is displayed indicating that the customer should contact an appropriate consultant. If configured for new funds, the customer is asked whether a prospectus for the selected "to" fund has been received. If so, the customer may proceed. If not, the customer is informed that a prospectus is required.

Once these steps have been performed, the system determines whether the "to" fund has a front-end load associated with it. If not, the process continues as shown in Fig. 20B. If a front-end load is applicable, the system determines whether the load on the "to" fund is greater than the load on the "from" fund. If not, the process continues as shown in Fig. 20B. If the load on the "to" fund is greater than the "from" fund, then the system determines whether the fund is priced hourly. The system then displays the net load or fees which are applicable based on the hourly-updated price or the last available price, and the customer is given the option of continuing.

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5 If a similar order was discovered, the system calculates whether enough shares would be left over after the similar order had been placed. If not, the customer is informed of the possible insufficient funds and is given the option of returning to an earlier options menu.

15 According to these processes, the method and
system according to the second embodiment permits one to
buy sell or exchange mutual funds. Moreover, the
customer is informed of applicable fees and any
promotional offers. As indicated, these transaction are
20 performed in compliance with applicable regulatory
provisions.

35 The system determines whether the customer has
a linked-brokerage account. If not, the system indicates
that the selected option is not available and the
customer is returned to a previous options menu. If the

customer does have a brokerage account, the system then determines which account the customer wishes to access. The system then displays a portfolio profile message and determines whether the broker system is available. The profile message is then displayed to the customer and the system determines whether the brokerage system is available. If the brokerage system is unavailable, the situation is indicated to the customer, who may then return to a previous options menu. The system then provides information relating to the customer's total holdings, including mutual funds and stocks, provides price quotations for both stocks and mutual funds, or consults a symbol look-up table for both stocks and mutual funds in accordance with the selection of the user. These processes correspond to those described above. For example, the brokerage system consults an outside quotation provider in order to determine the most current stock and mutual fund prices.

D. Detailed Description of System Elements (Figs. 14-15)

As mentioned above, it is a feature of the invention that preexisting systems can be reconfigured to support a combined brokerage and non-brokerage functions provided through an ATM. Accordingly, the following discussion describes by way of example, individual systems programmed in accordance with aforementioned processes. These systems together comprise one example of an integrated financial system according to the invention. Those skilled in the art will appreciate that a vast number of alternate embodiments are available without departing from the spirit or scope of the invention.

1. CAT

As described in reference to Fig. 1A, customer activated terminals (CATs) support common ATM functions such as cash withdrawals and deposits, transfers, account inquiries, and statement printing. Moreover, they
5 feature touch screens, color displays, dip type card readers, support for several different languages, and data encryption techniques.

CATs generally include standard microcomputer architecture including a processor with associated
10 volatile and non-volatile memory to execute various software systems. The software environment of CATs includes several communications modules and gateways, including a an integrator which handles message processing with the host or FEP. Such message processing
15 includes initialization processes, applications requests, retries and status reports to the external service provider. Other software elements include various device drivers and communications applications, such as a communications application for communicating with a
20 branch location which maintains the CAT.

Within this environment, a CAT or many other ATMs with comparable hardware/software support, can receive data from a front end which is displayed to a customer, as well as receive data input from the customer
25 which is provided to various service providers. Thus, a CAT can be suitably programmed in accordance with the above-described processes.

2. TPS/CPS

As illustrated in Fig. 2, the transaction
30 processing system is a front end processor which supports several access points, including a CAT 100. In the example shown in Fig. 14, two TPS locations 102 are linked to a regional interface (CPS) 106 via a common integrator 104. CPS 106 thus provides multi-region
35 applications, and, as described in greater detail below,

enables communications between a brokerage system which implements trade orders and real-time quote requests (as well as other financial providers). In this example, CPS 106 also permits portfolio evaluation based on real time information provided by the brokerage system.

Brokerage messages transmitted between TPS/CPS and a brokerage system may include any number of different data elements provided with a standard communications protocol. For example, data elements for trade requests may include date and time, type of action (order, cancel status request), order side (buy, buy minus, buy call, sell, sell short, and so forth), quantity, price, duration of request, account number, and others. Data elements for symbol look up requests may include a ticker symbol, an issuer name, a description, and a security category or subcategory information such as common stock, preferred stock and so forth. Accordingly, TPS/CPS supports the following functions referred to above: price quotations, portfolio profile, recent brokerage activities, portfolio inquiries, trades awaiting settlement, trades saleable, trade buys, possible duplicates inquiries, possible duplicates summaries, open orders. Data elements corresponding to this information is provided to the CAT in a format compatible with the CAT's software environment.

In this example, TPS/CPS also support off-line brokerage functions. For example, CPS supports setting of quotations limit files, customer trade limit files, and symbol files. These system variables are then globally applied to customers accessing the system.

In addition to supporting brokerage functions, TPS/CPS provides other functions. For example, as shown in Fig. 14, TPS utilize a cross reference file (XREF) containing data elements linking CINs, magnetic strip encoded information, and PINs with embossed numbers and customer accounts. Further, in this example, the CPS 106

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communicate to the quote portfolio systems through a X.25 communications network 148.

5 The system shown in Fig. 15 provides redundancy to ensure reliable processing. Specifically, the quotation/portfolio systems 132 and 134 comprise two RS/6000 systems connected to the TPS's 150 and 152. Only the primary system receives messages from the TPS's 150 and 152. The secondary system 134 remains in a standby state until it is detected that the primary system 132
10 has failed. Watchdog processes monitor the X.25 processes 148 and the query the servers 126 and 128.

According to this example, it is possible to provide the information necessary for securities trading, portfolio evaluation, and quotation inquiries to an
15 existing banking system. These functions are supported by redundant hardware and software environments to ensure the reliability necessary to ensure customer satisfaction.

Accordingly, several preferred embodiments have
20 been set forth in fulfillment of the various objects of the inventions. Specifically, a system and a method have been described which providing brokerage functions through a preexisting ATM network. In particular, the present system and method permit consumer to conveniently buy and
25 sell securities, obtain up-to-the-minute brokerage account valuation, and up-to-the-minute securities prices.

It should be recognized that these arrangements and methods are merely illustrative of the principles of
30 the present invention. Numerous modifications and adaptations thereof will be readily apparent to those skilled in the art without departing from the spirit and scope of the present invention. For example, it will be recognized that the system can be expanding to provide
35 other brokerage related transactions. Accordingly, the invention is only limited by the following claims.